

BULLETIN

The energy and planning resource for Western utilities

CITY OF PALO ALTO UTILITIES TESTS SMART STREETLIGHTS ALONG EL CAMINO REAL

CITY SEEKING FEEDBACK ON SOLAR PROJECT

El Camino Real, a historic road that runs nearly the full length of California's coastline, is making history again for its role in a six-month pilot project being conducted by the City of Palo Alto Utilities (CPAU). In partnership with energy technology provider Petra Systems, CPAU recently installed a string of nine smart solar streetlights along "The Royal Road."

The installation is testing the potential to generate renewable energy on streetlight poles. Solar photovoltaic, or PV, modules placed high on the poles capture the sun's energy and send it to the city's electric grid. The technology could help transform ordinary streetlights into a network of distributed solar power generating assets.

TAKING COMMUNITY'S PULSE

The PV-fitted streetlights are located along a well-trafficked mile of

El Camino Real. Interpretive signs in the area educate passers-by about the technology. "The pilot project area runs right by Stanford University, as well as soccer fields and parks, so residents will see what we are doing and be able to form an opinion about it," noted CPAU Communications Manager Catherine Elvert. "We are encouraging community members to provide feedback through an online survey."

The survey asks questions about residents' support for CPAU increasing the use of solar power, and allows them to express concerns about aesthetics, light quality and other issues. "The customer response to these modules can help us gauge how aggressively to pursue this type of local generation," Elvert added.

CPAU is engaged in several local solar initiatives as part of its ongoing commitment to invest in clean energy resources.

INNOVATING THROUGH PARTNERSHIP

Through its Program for Emerging Technologies, the municipal utility is able to "test drive" systems that may improve operations, create jobs and boost the sustainability of CPAU's generation portfolio. Launched in 2012, the program seeks out and nurtures creative products and services that manage and better use electricity, gas, water and fiber optic services.

Partnering with high-tech companies keeps the cost of innovation down. The El Camino Solar Test project will increase Palo Alto's renewable energy production at no cost to the city. Petra Systems offered CPAU the solar modules to evaluate their performance over the



This fully integrated smart solar streetlight, one of nine along El Camino Real in Palo Alto, California, produces energy equivalent to power two streetlights. The city is asking residents to give their opinions on the project in an online survey. (Photo by City of Palo Alto)

six-month pilot duration. The nine units are estimated to have a total nameplate capacity of about 2.25 kilowatts, with each solar module expected to produce 374 kilowatt-hours per year. That electricity is enough to power the equivalent of two streetlights, making the LED, or light-emitting diode, streetlights net producers of electricity.

IMPROVING SERVICE, LOWERING COSTS

Project Manager Lindsay Joye pointed out that generation is just a small part of smart solar technology performance. "The technology goes well beyond self-powering to give the city greater control of its streetlight assets," she said.

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SHELTON GROUP RELEASES ENERGY PULSE 2014

We have been hearing it for years now: The utility industry is changing in a fundamental way. Yet many power providers are still waiting to see how the new energy landscape shapes up before deciding how to react. *Energy Pulse 2014: Navigating a Rapidly Changing Residential Energy Environment* makes a strong case for seizing the moment.

According to report author The Shelton Group, dozens of companies are now competing for control of the American home energy market in a sandbox where only utilities used to play. Moreover, these upstarts have the consumers' attention. The data from the annual consumer survey points to the need for utilities, builders and manufacturers to develop a proactive strategy for customer engagement.

A key point in *Energy Pulse* is that utilities can no longer assume their customers will remain loyal in a marketplace of new options for acquiring and managing energy. Other findings reveal:

- Which Americans aren't thrilled with their utilities – and why that doesn't necessarily matter
- How many Americans would actually leave their utility if they

could – and where they'd like to go instead for their electric service

- Why consumers aren't participating in energy efficiency programs – and what can be done to change that
- Which home energy needs are crying out to be filled by utilities, builders and manufacturers – and how to get residential customers on board
- What Gen Xers and Millennials say about technology and energy consumption – and why they may hold the utility's success or failure in their hands

The good news is that power providers can emerge as winners in the new energy game – if they take steps to build rock-solid customer relationships. The report suggests strategies such as:

- Disrupting consumers' denial – because a growing economy and lower fuel prices have given them amnesia about why they need to make energy-efficiency improvements.
- Revamping incentives – because most consumers don't know they exist and too many layers of red tape keep them from participating in utility programs.

- Learning to speak the customer's language – because consumers rarely make energy-efficiency improvements for the reasons utilities think they do (hint: most consumers can't even explain what the term "HVAC" means.)
- Inventing new products and services to win customer loyalty – because with the home energy market up for grabs, utilities need loyal customers more than ever.

Download the executive summary for a free sneak-peek, and while you are there, consider signing up for Shelton Insights newsletter.

The *Energy Pulse* questionnaire surveyed a total of 2,009 Americans online, using members of Survey Sampling International's online panel of over three million U.S. Internet users. Based on the total population of U.S. households (116,291,033), results from this study have an overall confidence level of 95 percent and a margin of error of +/- 2.2 percent.

The Shelton Group is a marketing communications agency dedicated to the sustainability and energy-efficiency sectors. Founder Suzanne Shelton has been a frequent and popular speaker at the Utility Energy Forum and the Rocky Mountain Utility Efficiency Exchange. ⚡

ENERGY SERVICES BULLETIN

The Energy Services Bulletin is published by Western Area Power Administration for its power customers. The mailing address is Western Area Power Administration, P.O. Box 281213, Lakewood, CO 80228-8213; telephone (720) 962-7508.

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Editor: Kevon Storie
Designer: Grant Kuhn

**ENERGY
SERVICES**
Western Area Power Administration

Smart streetlights from page 1

The modules are equipped with an LED light controller that allows the city to remotely turn streetlights on or off. The brightness of individual lights or groups of lights can be adjusted to accommodate the traffic levels in different neighborhoods, as well. On a citywide scale, the dimming function can provide even deeper energy savings from the already-efficient LED lamps, Joye noted.

The system offers additional features that can streamline maintenance and enhance public safety. The controller can flicker specific lights to help direct emergency response personnel when needed, and can notify the city immediately of a malfunctioning light, including the failure type and exact location. Elvert said, "If the city decides to expand the project, high-traffic roads and expressways would be good candidates for installations. With the smart-grid and remote control capabilities, there would be less need to put our crews in harm's way." ⚡

WESTERN, DOE ANNOUNCE 2015 TRIBAL RENEWABLE ENERGY WEBINAR LINEUP

The webinar series for Native American tribes, government officials and renewable energy developers returns Jan. 28, 2015, with a new schedule covering the many aspects of developing energy efficiency and renewable energy projects.

Now in its third year, the Tribal Renewable Energy Webinar series is a cooperative production by Western, the Tribal Energy Program and the Office of Indian Energy. Knowledge to Energy: The Path to Projects builds on the material presented in the previous years' webinars, as well as experiences from projects being developed in Indian Country.

"The planning committee worked closely with many stakeholders to identify and prioritize potential topics for the 2015 webinar series," said Western Renewable Program Manager Randy Manion. "We then analyzed participant

interest over the previous 24 months, considered past and current technical assistance activities in Indian Country, and made final determinations regarding highest value topics to include in the 2015 series."

The result is a series that focuses on best practices, case studies, regulatory issues and business and financing models:

- Jan. 28 – Best Practices in Developing a Tribal Strategic Energy Plan
- Feb. 25 – Models for Tribal Energy Development Organizations
- March 25 – Tribal Energy Development Operation and Management Best Practices
- April 29 – Innovative Energy Efficiency, Renewable Energy, and Grid Technology Updates
- May 27 – Tribal Case Study Using Models and Tools for Evaluating

Energy Efficiency and Renewable Energy Program and Project Opportunities

- June 24 – Regulatory Impacts on Indian Lands
- July 29 – Best Practices for Developing and Implementing a Request for Proposals
- Aug. 26 – Successful Tribal Renewable Energy Projects
- Sept. 30 – Effective Ways for Tribal Governments to Work with Utilities
- Oct. 28 – Advanced Financing Models

Nov. 18 – Putting it all Together

The webinars are generally held on the last Wednesday of the month from 11 a.m. to 12:30 p.m. Mountain Time. Visit the Tribal Energy Program for more information and links to registration (required). ⚡

TAKE PART IN SEPA'S ANNUAL UTILITY SOLAR SURVEY

DEADLINE: FEBRUARY 4, 2015

Solar Electric Power Association (SEPA) is conducting the eighth annual survey to provide data for its 2014 Utility Solar Market Snapshot, to be released in April 2015, and its new Utility Solar Market Report, scheduled for a June 2015 release.

The annual survey collects utility data on solar electricity installations in the United States, both photovoltaic and concentrating solar power on the customer and utility side of the meter. Past reports have garnered significant media attention from outlets such as the Wall Street Journal, Renewable Energy World, Transmission & Distribution World,

and Reuters.

Municipal and cooperative utilities are making an impact in solar development especially in terms of watts per customer. Kauai Island Electric Cooperative and Imperial Irrigation District are two that made the 2013 Top 10 list for Annual Watts per customer. Each year, SEPA also announces the top ten annual and cumulative solar MW [megawatts] and Watts per Customer awards at its Utility Solar Conference.

Other Western customer utilities that saw significant solar activity in 2013 include Los Angeles Department of Water and Power, and Salt River Project in Arizona, ranking 15th and 21st respectively.



Overall, 142 MW of solar was integrated by municipal utilities in 2013, including 12 that integrated 1 MW or more each. Cooperative utilities integrated 28 MW of solar in total, including eight that integrated 1 MW or more.

Please send your response by Feb. 4, 2015. Early submissions are appreciated, and those submitting by the deadline will receive complimentary summary reports. For more information, contact Miriam Makhoun at 202-379-1615. ⚡

LOS ANGELES RECOGNIZED AS WATER CONSERVATION LEADER

A recent article in the New York Times highlights the progress the city of Los Angeles has made in water conservation. The words “water” and “Los Angeles” still cause much of the public, including residents, to think of the California Water Wars that inspired the film “Chinatown.” But over the past 15 years, the city has quietly become something of a pioneer in cost-effective, environmentally beneficial water conservation, collection and reuse technologies.

Not just a pioneer, but an award winner as well: The U.S. Water Alliance bestowed one of its first water sustainability awards on the city’s water integrated resource plan in 2011. Another honor followed this year when the Institute for Sustainable Infrastructure

gave its Envision Platinum Award to the South Los Angeles Wetlands Park. The project turned nine acres of disused bus maintenance yard into a public park that doubles as stormwater treatment facility.

Results mean more than awards and imitation, however, and Los Angeles is seeing those, too. The city now consumes less water than it did in 1970, while its population has grown by more than a third. Projects like the retrofit of the flood-prone Elmer Avenue in the Sun Valley neighborhood are showing that rainwater collection can be cost effective, too. Production of water like that captured by the project costs \$300 an acre-foot, compared to the \$800 to \$1,000 per acre-foot Los Angeles now pays for imported water.

The success of the demonstration projects spurred city officials to adopt an ambitious 20-year water management plan that treats the Los Angeles Basin as a single watershed. The state supports the massive plan, but implementation will be difficult given that more than 100 water-conveying entities operate in the basin.

A city that imports 89 percent of its water cannot rest on its conservation laurels, especially as droughts in the West threaten to lengthen and deepen. Even so, Los Angeles is taking bold steps to address a problem—water shortage—that most municipalities in our region will face. Western congratulates Los Angeles and looks forward to sharing more success stories on the city’s water management plan. ⚡



The South Los Angeles Wetlands Park repurposed a former transit brownfield site as a sustainable green space that treats storm runoff. The City of Los Angeles Bureaus of Engineering and Sanitation, Recreation and Parks, the Metro Transit Authority and Council District 9 partnered with Psomas engineering firm to build the innovative stormwater capture system. (Photo by Psomas.)

LEDs RELIGHT MOUNTAIN VILLAGE

San Miguel Power Association, serving Colorado's Western Slope, recently teamed up with Cooperative Business Lighting Partners and the town of Mountain Village, Colorado, to replace 4,828 conventional light bulbs with efficient LEDs, or light-emitting diodes.

The Relight Mountain Village program provided town residents with deeply discounted LED bulbs to improve lighting efficiency in their homes or businesses. Cooperative Business Lighting

Partners sold a variety of LED bulbs at a reduced rate to Mountain Village residents. San Miguel funded the discount with a generous rebate passed through from its wholesale power provider, Tri-State Generation and Transmission Association, along with \$20,000 from the town's energy reduction projects budget.

Cooperative Business Lighting Partners estimates that the project will reduce the town's overall



energy use for lighting by 518,998 kilowatt-hours annually, and have a payback period of less than four months.

Learn more about this stunningly successful community program in SMPA's December newsletter (page 2). ⚡

RMEL FOUNDATION NOW ACCEPTING APPLICATIONS

DEADLINE: JANUARY 30, 2015

The challenge of building the next generation electric industry workforce is one that haunts many a utility, especially those in small towns and rural communities. The RMEL (Rocky Mountain Electric League) Foundation addresses this issue by offering scholarship opportunities through its members.

The Foundation is currently accepting applications from students seeking baccalaureate degrees as well as students entering craft or certificate programs. Scholarships are available to high school seniors or college undergraduates enrolled in and pursuing an undergraduate or associate degree or entering an appropriate certificate program with the goal of a career in the electric energy industry.

Students from all parts of the RMEL service territory may apply. The RMEL Foundation selection committee evaluates applications based on goals and aspirations in the electric energy industry, motivation to succeed, service to community and school and academic ability.

Scholarships provided in the name of a donor are also available through the RMEL Foundation. The number of scholarships and amounts awarded depend on donations. Immediate family and employees of the donor are not eligible for these scholarships. Email James Sakamoto or call 303-865-5544 to donate a corporate named scholarship.

To apply, students must create an account with RMEL Foundation and complete the online form. All scholarship applications must be submitted online by 5 p.m.



MST, January 30, 2015. No mailed submissions will be accepted.

The Foundation relies on RMEL member companies to promote these scholarships, and encourages members to share this opportunity throughout their companies and communities. Help grow the electric energy workforce of tomorrow by sharing the 2015 scholarship application with your industry and education contacts. ⚡

NEW ENERGY-EFFICIENT FOOD PACKAGING PROCESS SUBJECT OF E3T WEBINAR

The next webinar from the Emerging Technologies Showcase highlights Microwave Assisted Thermal Sterilization, Jan. 21, at 11:00 AM Mountain Time.

Microwave Assisted Thermal Sterilization™ (MATS™) is an improved food preservation technology for processing high-moisture, low-acid perishable products in containers. Packaged foods treated with this process is shelf stable for prolonged periods at ambient temperatures. Improvements include dramatically reduced excess process heating time, resulting in superior product quality and nutritional attributes. Currently, energy engineers are working with food scientists to compare the energy intensities of MATS™ with conventional process technologies.

A question and answer session follows the presentation.



Western cosponsors this free monthly webinar series with the Bonneville Power Administration. All webinars are recorded and available on the E3T website, and Conduit. ⚡

UPCOMING DEADLINES

Jan. 12, 2015 – Applications for DOE Buildings Energy Efficiency Frontier and Innovation Technologies

Jan. 12 – Applications for DOE Landscape Design for Sustainable Bioenergy Systems

Jan. 23 – USDA Wood Innovations Funding Opportunity

Feb. 20 – Full proposals for DOE funding for concentrating solar power projects

March 1 – HUD National Disaster Resilience Competition

March 15 – SunShot Initiative Sustainable and Holistic Integration of Energy Storage and Solar PV